M-215

Transportation Analysis

State of Minnesota
Department of Transportation

Bureau of Policy and Planning

ADMIN 1000 (REV. 4/77)

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT Mn/DOT-Transportation Forecasts
Room 813

DATE: July 27, 1978

TO : Merritt Linzie
Assistant District Director
District 9 - Oakdale

FROM : Kenn Kopitzke
Director
Transportation Forecasts Section

PHONE: 296-6759

SUBJECT: T.H. 494 from T.H. 36 to Mississippi River Bridge (S.P. 1985 and 1986)
SPAR M-275

SP 1985 82

Estimated year 2003 ADT and peak hour volumes for T.H. 494 from T.H. 36 to the Mississippi River Bridge in South St. Paul are enclosed. A point-to-point description of major movements through the area has also been prepared. The report includes estimates of 1983 and 1993 volumes for the same freeway segments.

Traffic data requested also includes an estimate of a one hour average of the high eight hours of the average day. The high eight hours on the freeway mainline can be expected to contain 50% of the ADT, and thus the average hour during this period would be 6.25% of the ADT.

Volumes shown in this report are based on the Metropolitan Council's estimates of year 2000 vehicle trips, produced by gravity model and model split runs made in January, 1978. The trip table was assigned to highway network 1-C. This network assumes completion of all proposed metropolitan area interstate freeways, including T.H. 35E in St. Paul from West Seventh Street to T.H. 94. A study was also made to find out whether deleting the uncompleted St. Paul portion of T.H. 35E would affect travel on T.H. 494. The results of this study are reported below.

The 2000 trip tables assigned to this network are based on the most recent estimates of population and employment prepared by the Metropolitan Council. Expectations of future growth in the total metropolitan area and in the portion of Dakota County served by this section of T.H. 494 have been reduced considerably as compared with earlier forecasts. The following table compares 2000 forecasts of major land use variables as used in SPAR M-180 (January, 1977) and the present report:

TRAFFIC ANALYSIS DISTRICT	POPULATION M-180	POPULATION M-215	EMPLOYMENT M-180	EMPLOYMENT M-215	DWELLING UNITS M-180	DWELLING UNITS M-215
16(Mendota Hts.)	21350	12200	11200	8400	8600	4170
17(W. St. Paul)	21700	19500	12500	10000	8700	8300
18(S. St. Paul)	23350	22000	13000	8850	8600	8800
19(Eagan)	73800	47000	37500	24000	25700	17500
20(Inver Grove Hts.)	55200	29700	20500	10350	18500	10250
48(Airport - V.A.)	450	525	23200	27000	100	130
50(E. Bloomington)	39500	35700	42000	40400	14500	13700

Volumes assigned to the T.H. 494 mainline are similar to those in SPAR M-180. It appears that reduced trip generation in the T.H. 494 service area has been counterbalanced by an increase in trip length produced by the year 2000 gravity model distribution. An example of added trip length is shown by the fact that approximately 35% of all the trips assigned to the T.H. 494 Minnesota River Bridge also cross the Mississippi River at Newport, whereas only 14% of the trips were of that length in the SPAR M-180 assignments.

Trips from the airport are a major contributor to traffic volumes west of the Minnesota River. The year 2000 computer traffic assignment has more than 80000 two-way trips loaded onto the network at the main airport entrance as compared with 36000 in 1970. However, the Metropolitan Airports Commission Master Plan Study, on which the forecast is based, assumes construction of a new west terminal with access to CSAH 62 and some use of other adjacent land for airport service activities. The number of trips using the main airport entrance and T.H. 5 thus requires some reduction from the computer assignment. In this report the total traffic using the airport entrance has been reduced by 25% to 60000 trips.

About half of the total traffic approaching T.H. 494 on T.H. 5 is airport generated. There are 18000 two-way trips turning west onto T.H. 494 and 10000 turning east.

An assignment was made to a revised version of network 1-C with T.H. 35E deleted in St. Paul between West Seventh and T.H. 94 to see what effect this would have on T.H. 494. Volume changes on T.H. 494 were found to be very small. The table below compares assigned 24 hour two-way volumes on several bridges and at various locations on T.H. 494:

Location	With T.H. 35E	Without T.H. 35E
T.H. 494 - Minnesota River Bridge	62709	63148
T.H. 55 - Mendota Bridge	41572	45200
T.H. 35E - Lexington Bridge	60222	45566
T.H. 3 - Lafayette Bridge	43455	47673
T.H. 494 - E. of T.H. 35E	65830	67293
T.H. 494 - W. of T.H. 3	90604	92382
T.H. 494 - E. of T.H. 3	86176	87372
T.H. 494 - Mississippi River Bridge	82702	84044

Enclosure

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

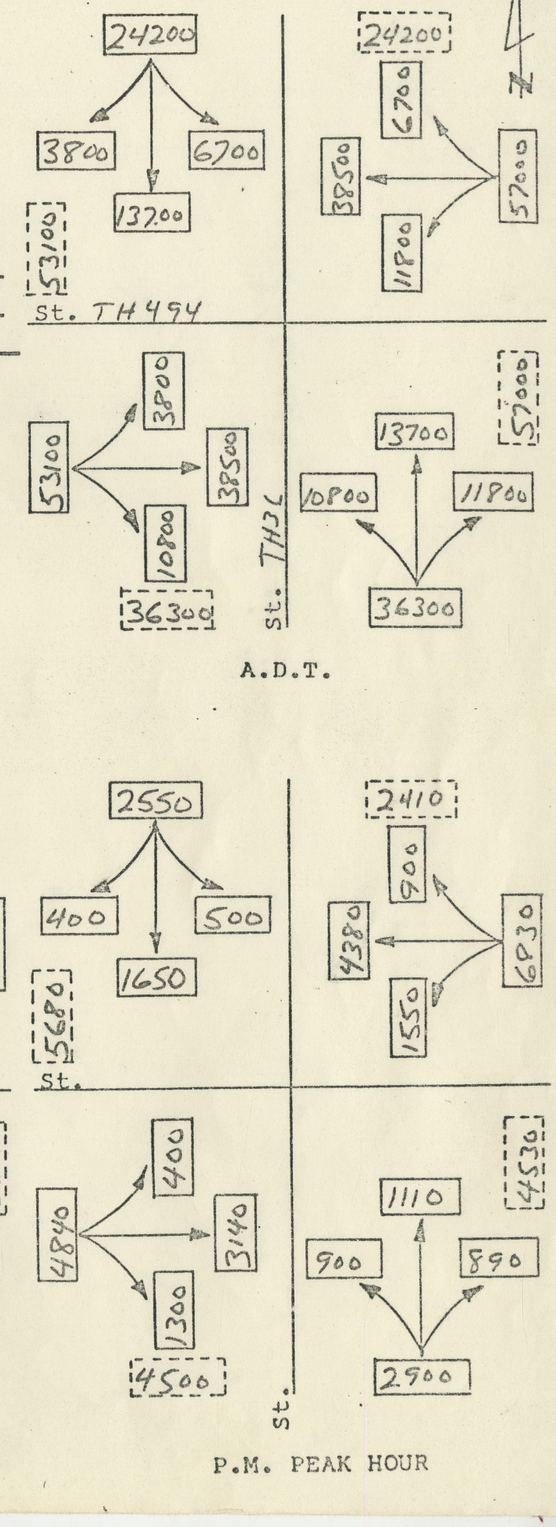
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

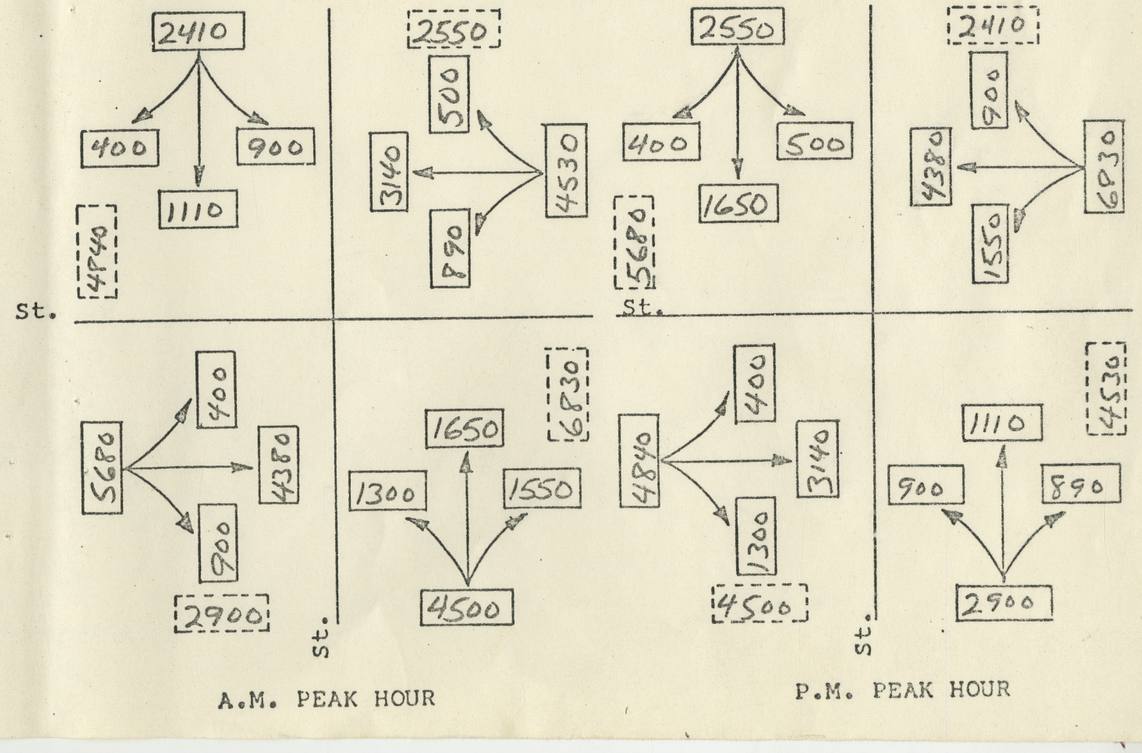
~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location TH36 and TH494
System No. 1-C at Node ____
TAS No. 215 DATE 7-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis Airport Reduced
Traffic Count ____





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SCHEMATIC TURNING MOVEMENT

(1)

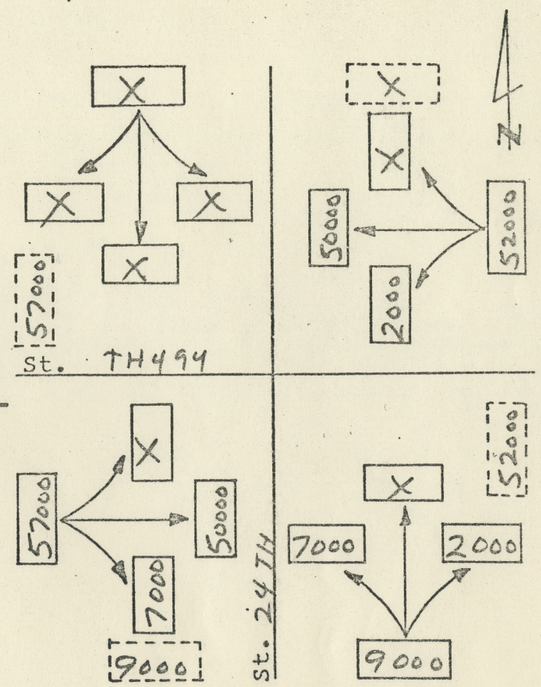
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location 24TH AVE and TH494
System No. 1-C at Node ____
TAS No. 215 DATE 7-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis Airport Reduced
Traffic Count ____



A.D.T.

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

(2)

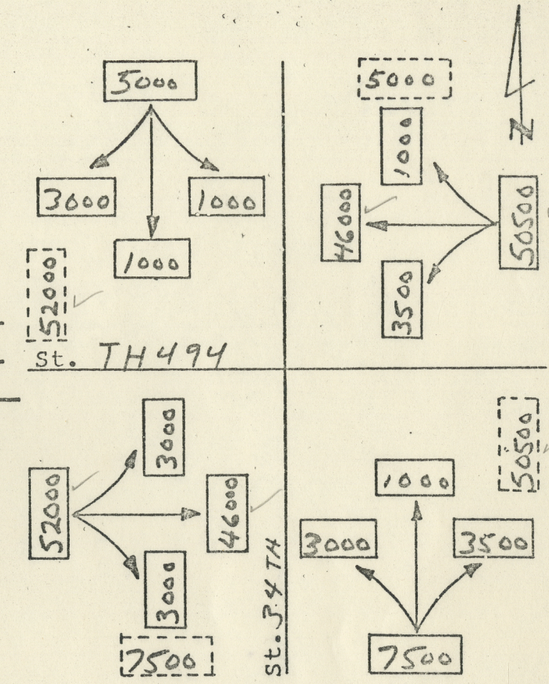
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location 34TH AVE and TH494
System No. 1-C at Node ____
TAS No. 215 DATE 7-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis Airport Reduced
Traffic Count ____



A.D.T.

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

(3)

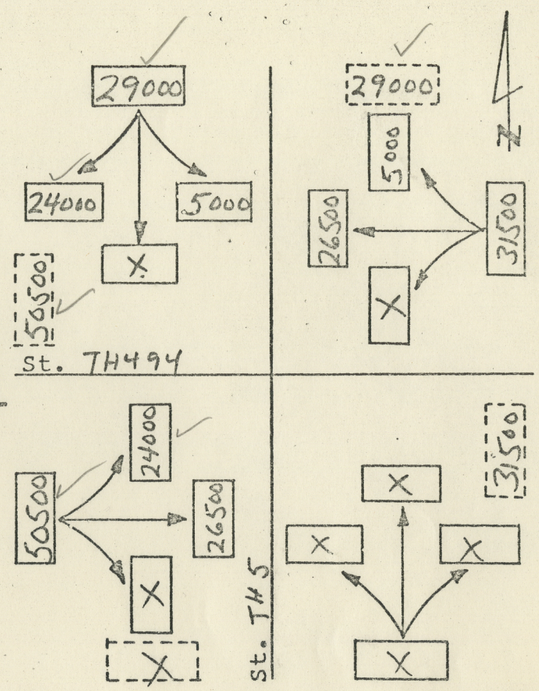
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location TH5 and TH494
System No. 1-C at Node ____
TAS No. 215 DATE 7-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis Airport Reduced
Traffic Count ____



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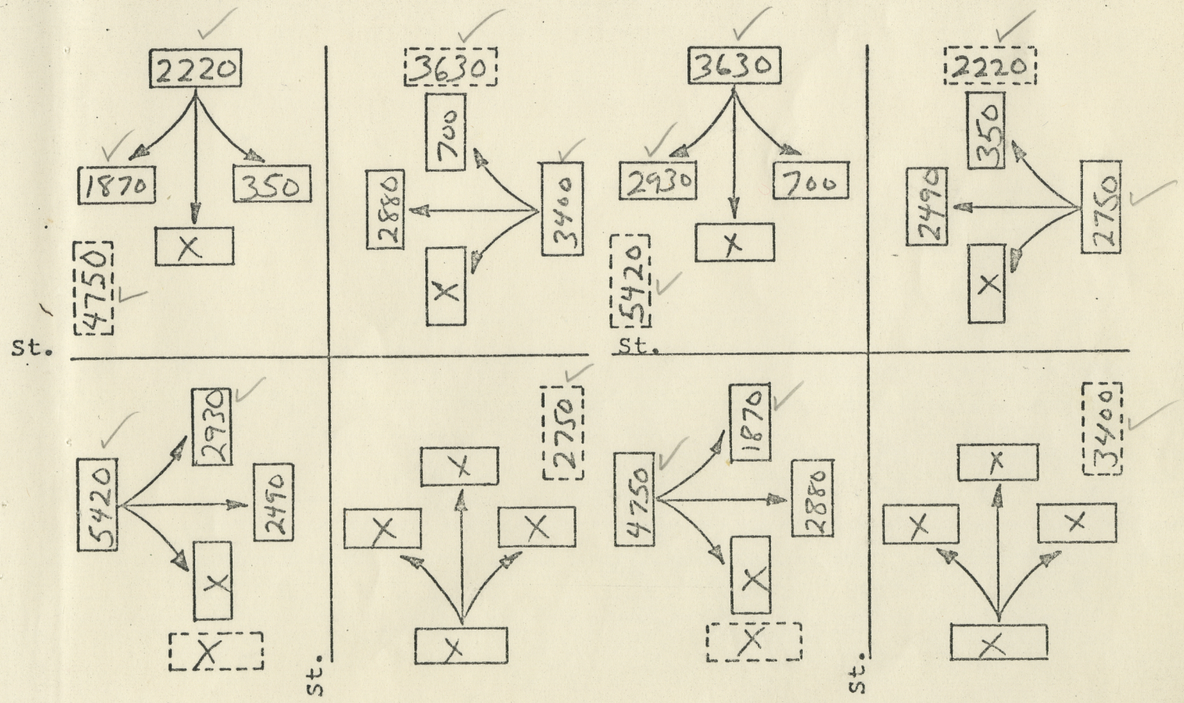

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

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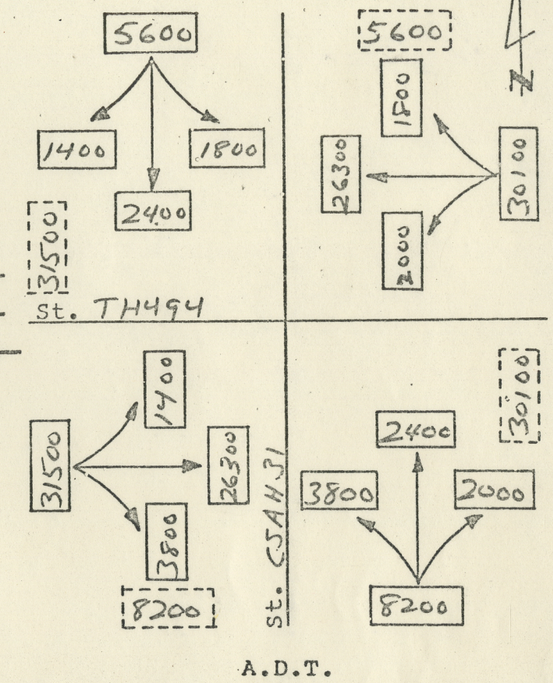
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location CSAH31 and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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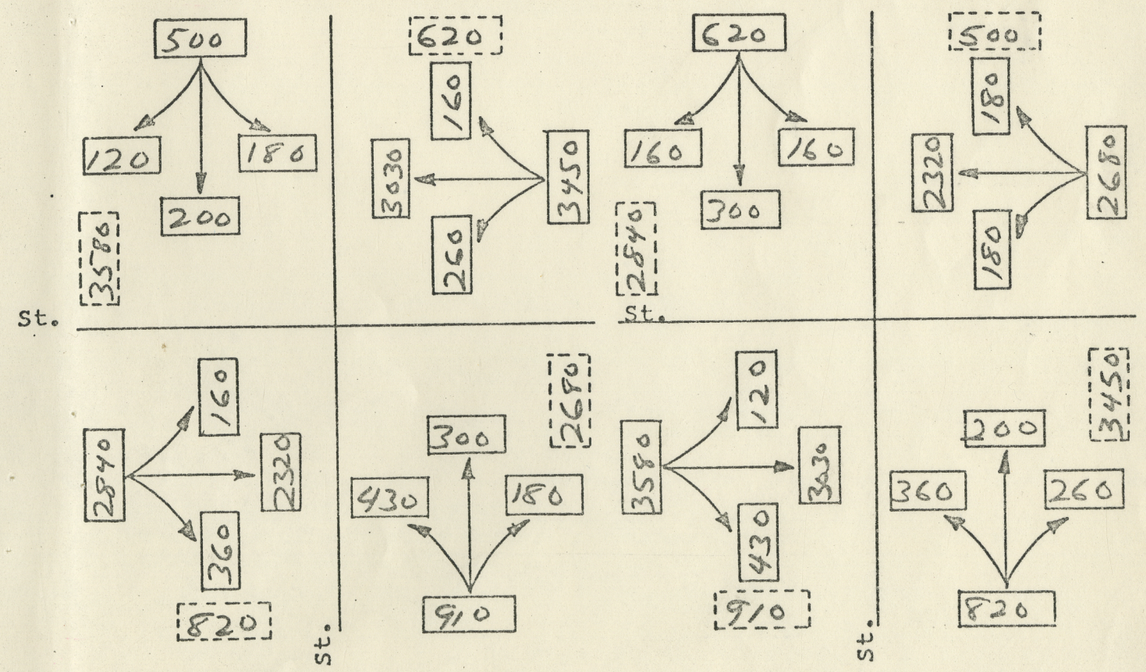

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

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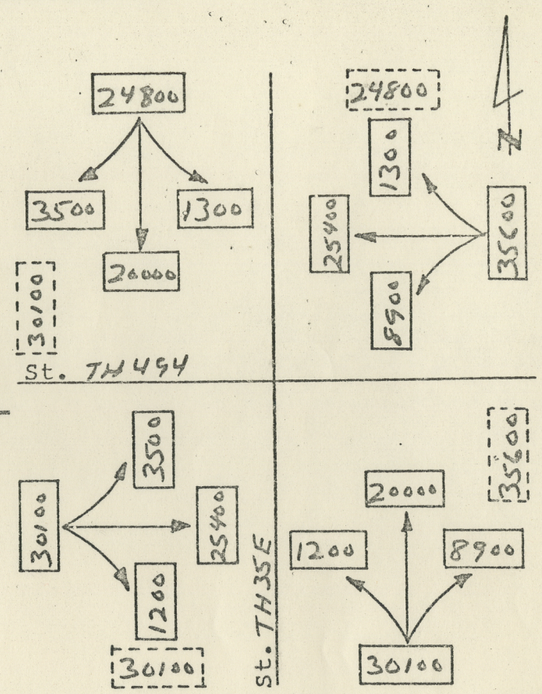
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2008 TRAFFIC ASSIGNMENT VOLUMES

Location TH35E and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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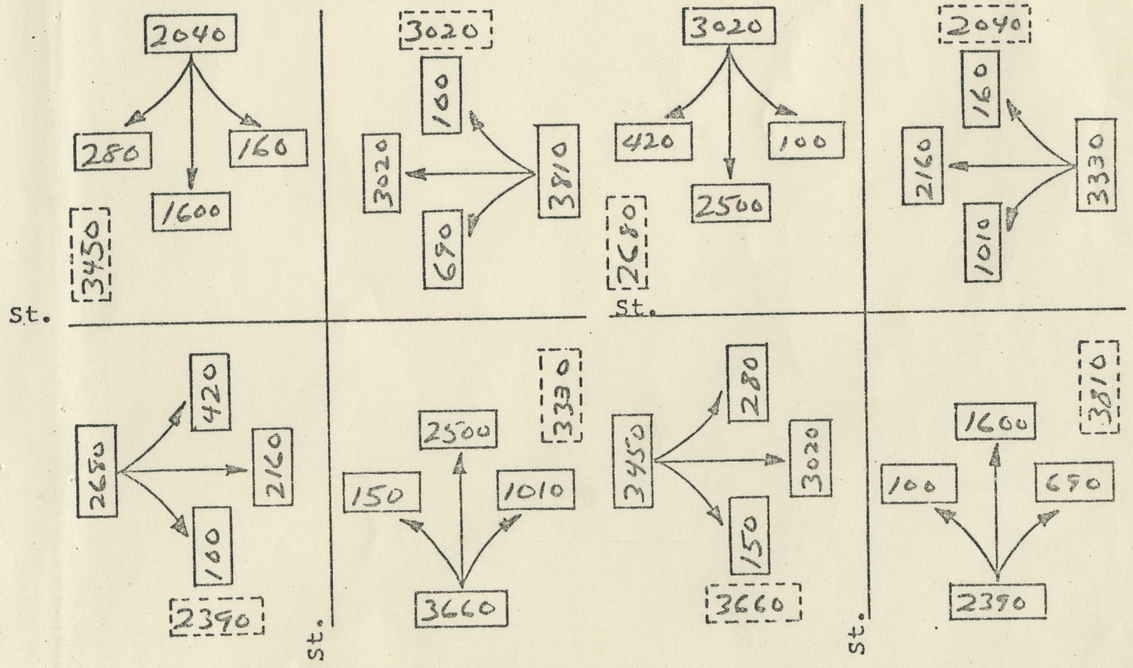

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

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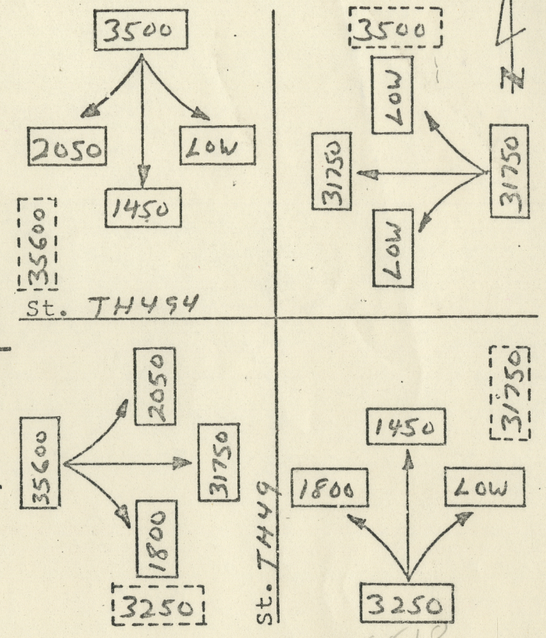
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2008 TRAFFIC ASSIGNMENT VOLUMES

Location TH49 and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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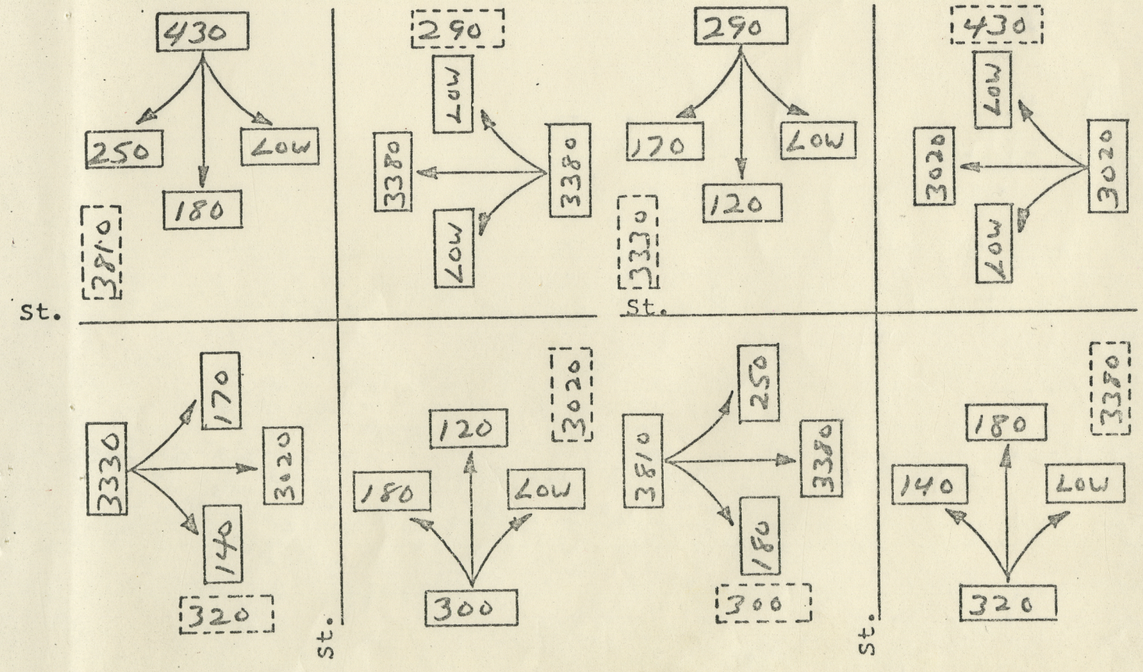

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

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SCHEMATIC TURNING MOVEMENT

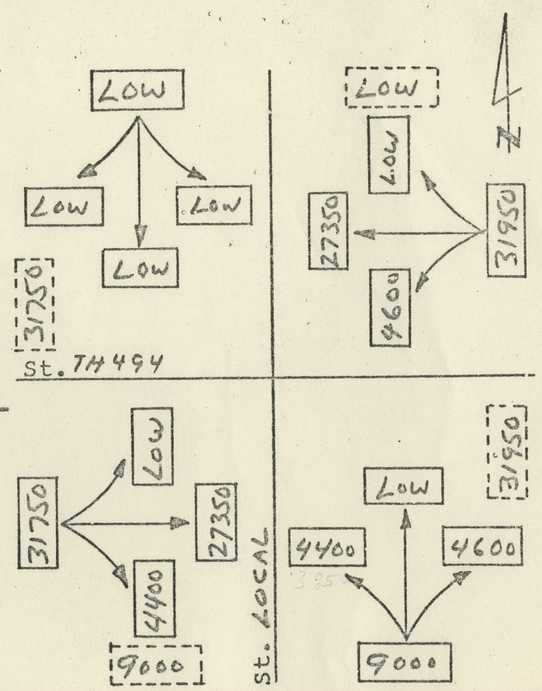
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location LOCAL ACCESS and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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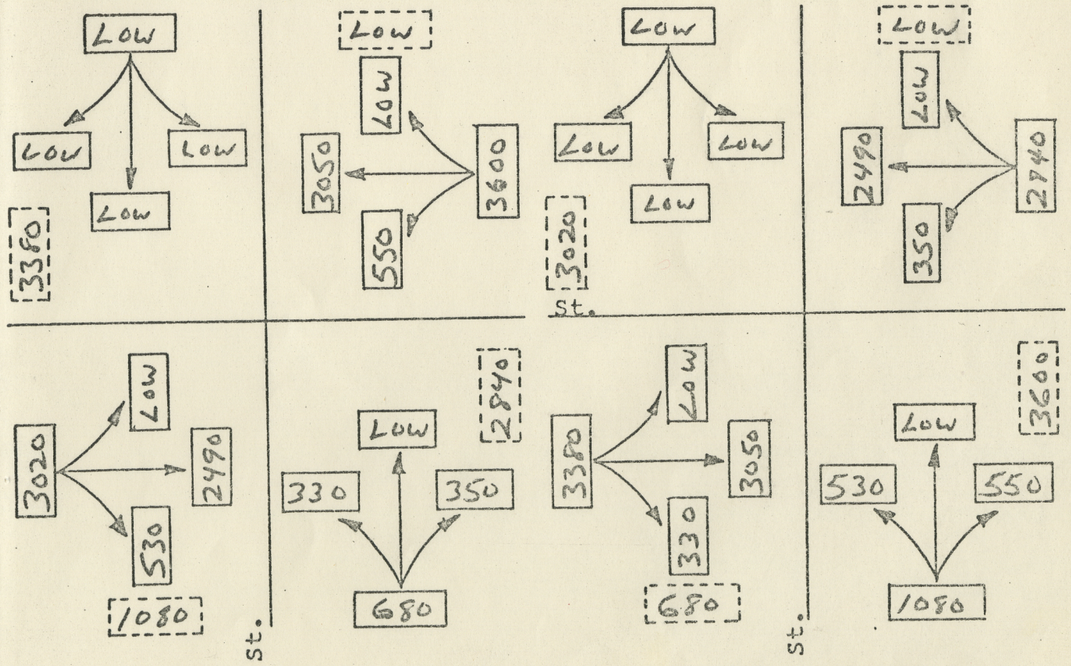

A.M. PEAK HOUR

P.M. PEAK HOUR

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SCHEMATIC TURNING MOVEMENT

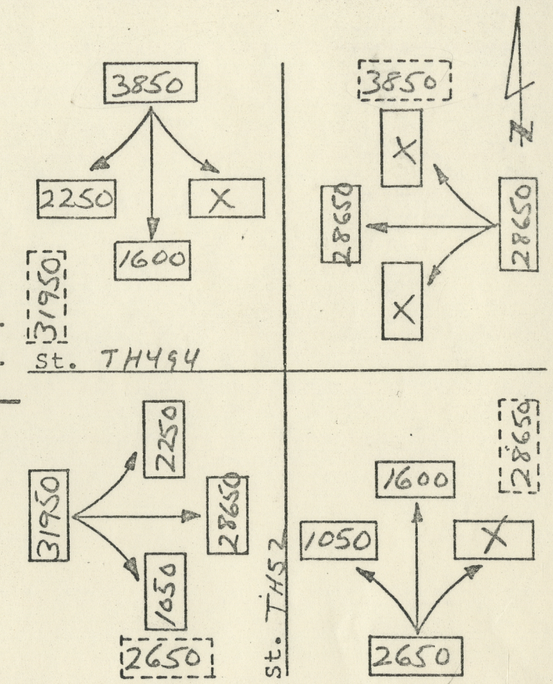
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location TH52 and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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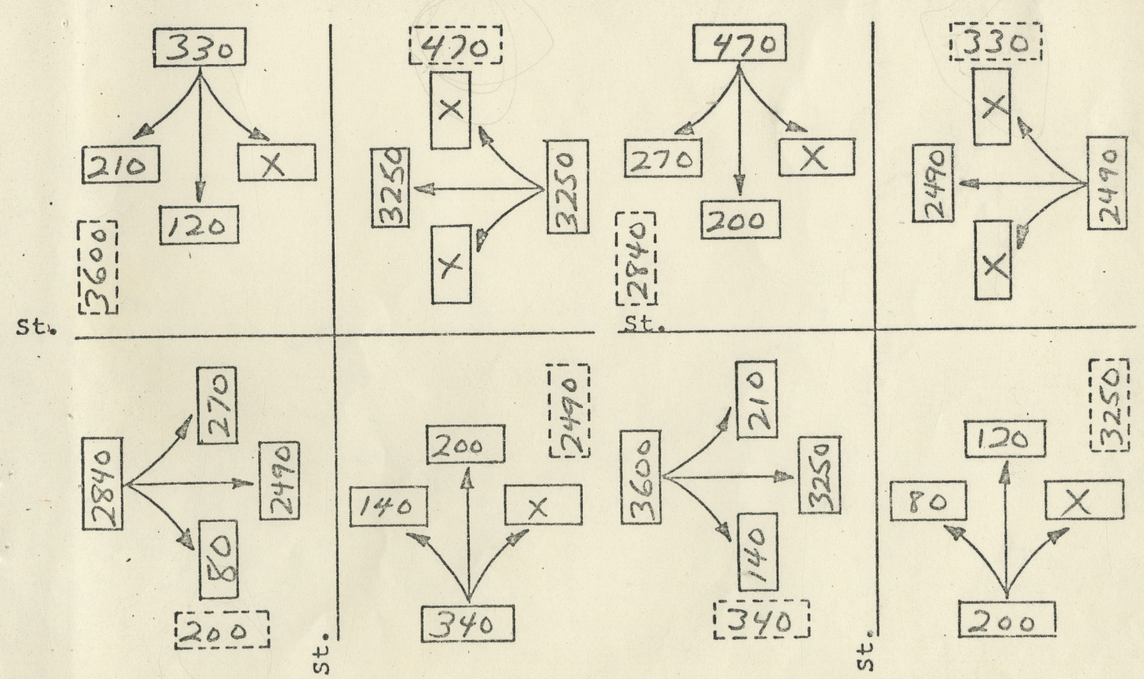

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

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SCHEMATIC TURNING MOVEMENT

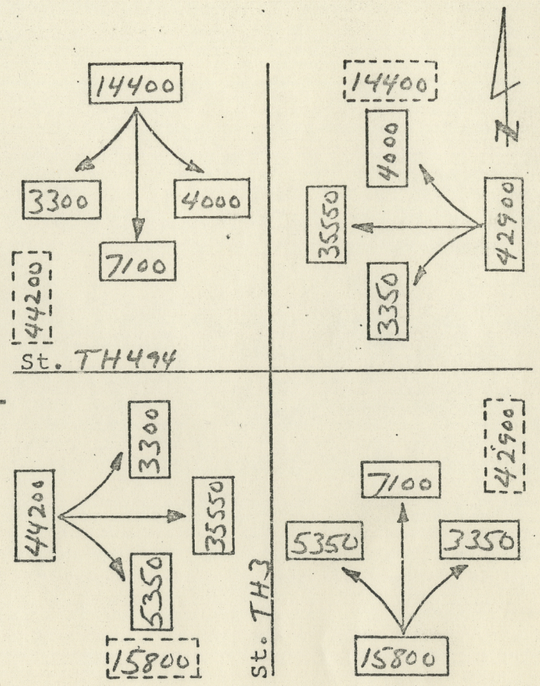
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location TH 3 and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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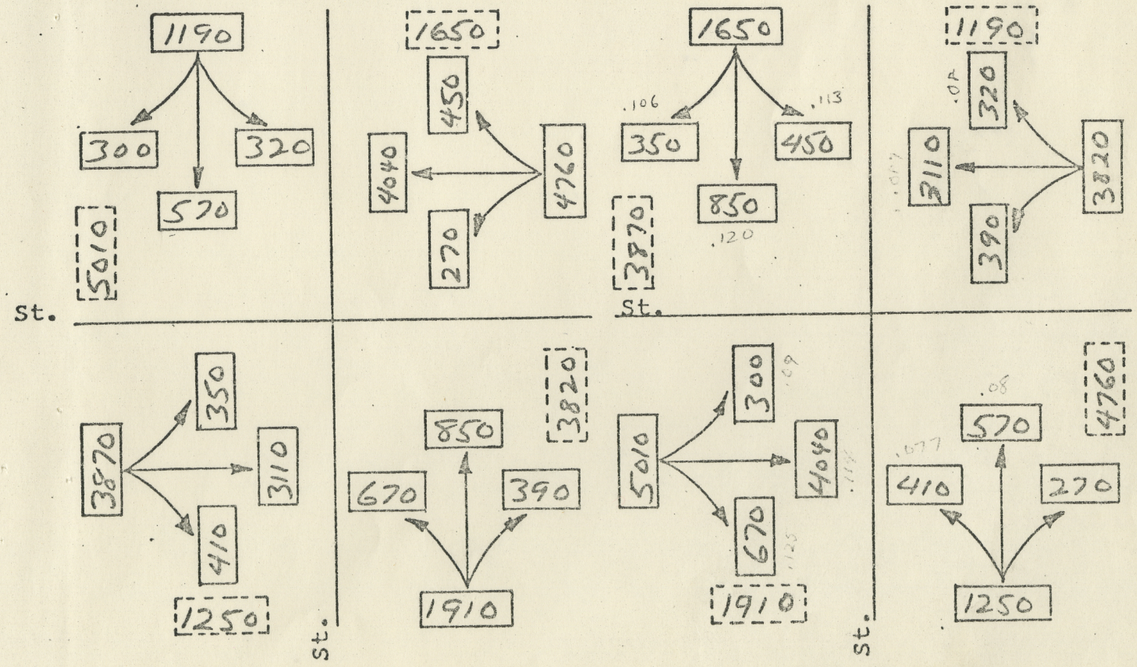

A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

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SCHEMATIC TURNING MOVEMENT

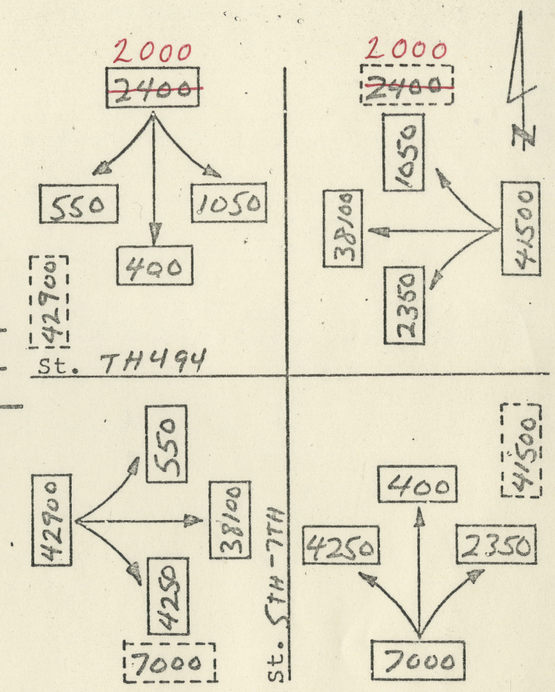
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location 5TH-7TH and TH494
System No. 1-C at Node ____
TAS No. ____ DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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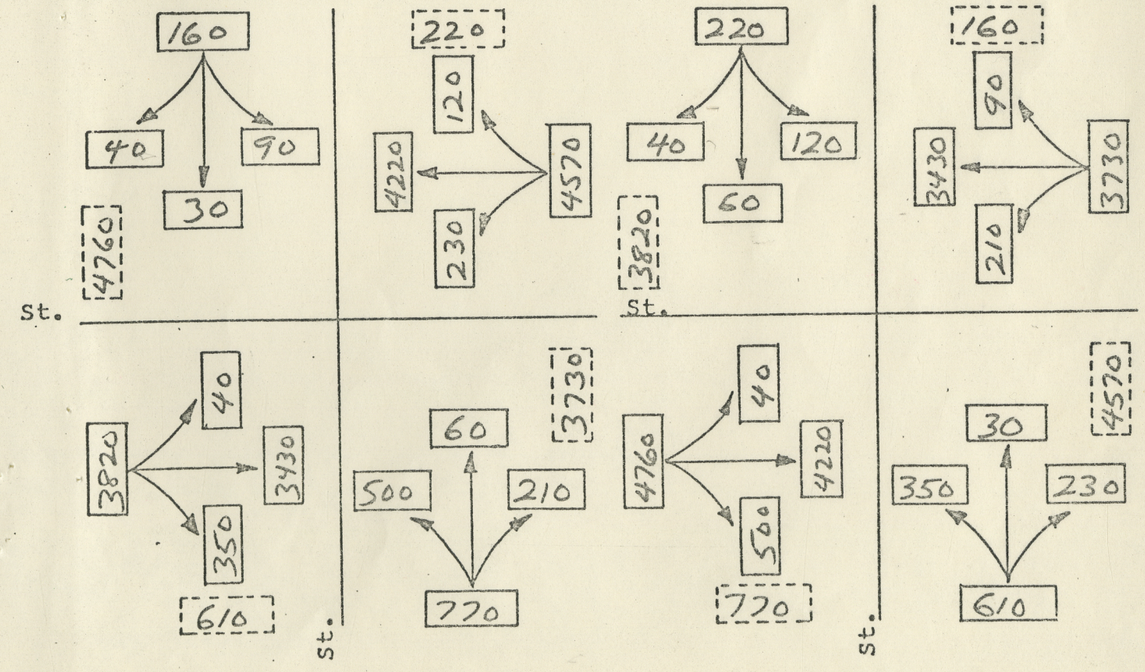

A.M. PEAK HOUR

P.M. PEAK HOUR

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SCHEMATIC TURNING MOVEMENT

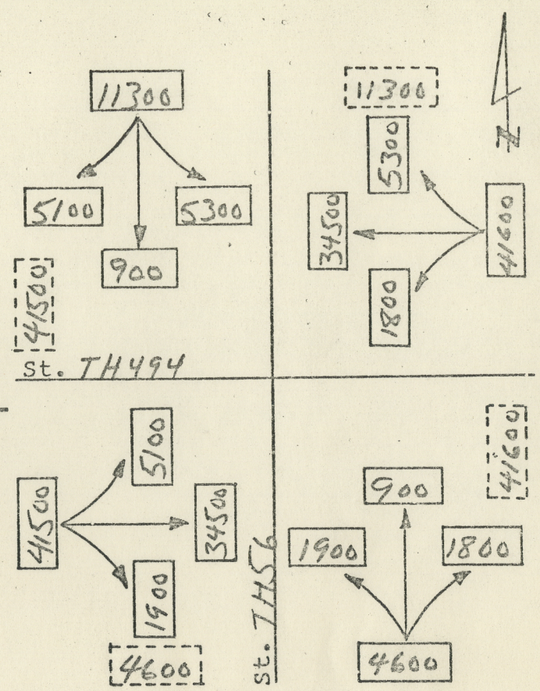
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2008 TRAFFIC ASSIGNMENT VOLUMES

Location TH56 and TH494
System No. 1-C at Node
TAS No. DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



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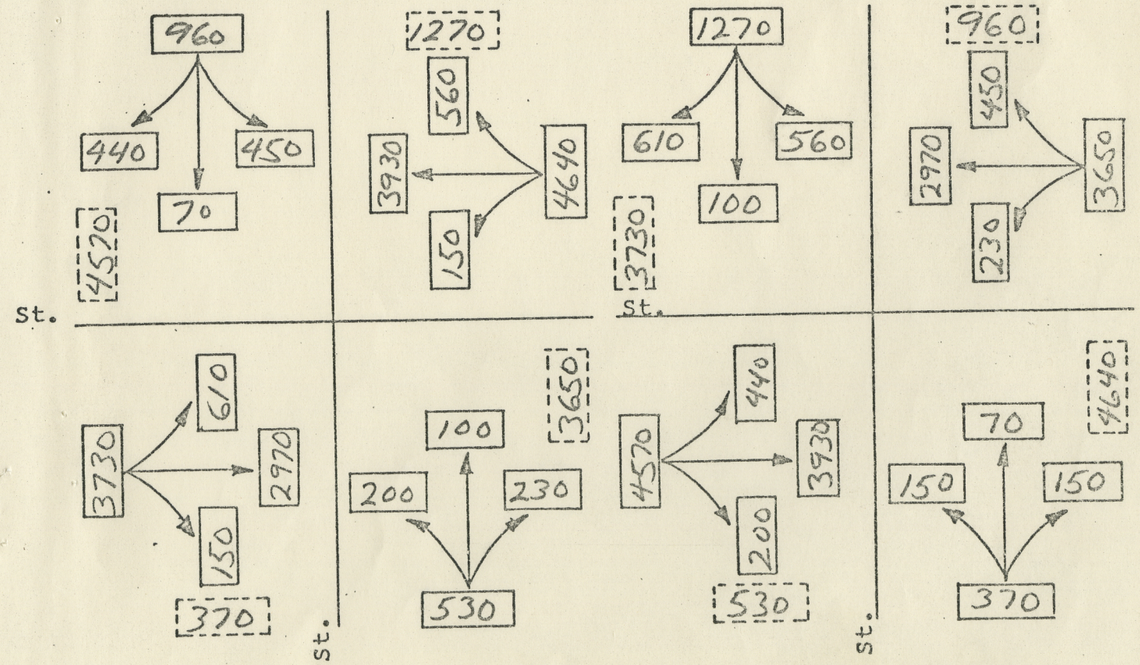


A.M. PEAK HOUR

P.M. PEAK HOUR

Form 29131 (Rev. 12-68)

(12)

SCHEMATIC TURNING MOVEMENT

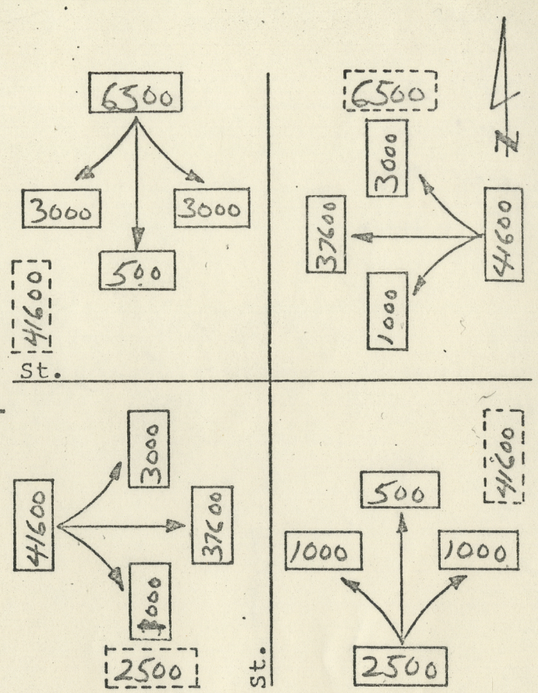
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

~~19~~ 2008 TRAFFIC ASSIGNMENT VOLUMES

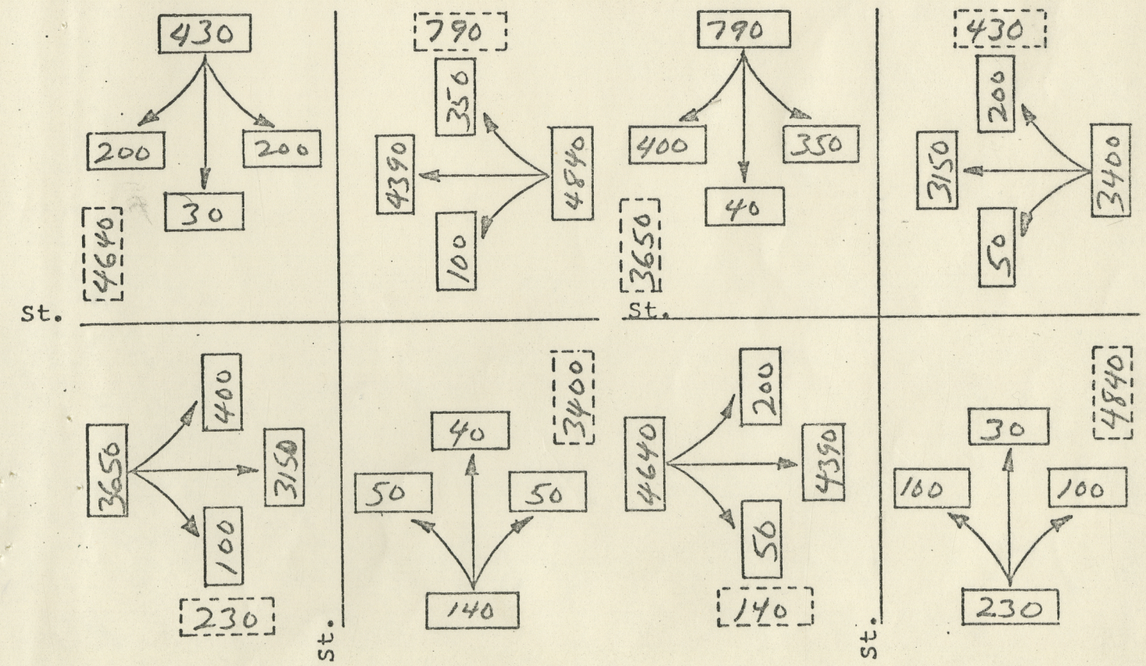
Location Indus. Rd and TH494
System No. 1-C at Node
TAS No. DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ____
Analysis ____
Traffic Count ____



A.D.T.



A.M. PEAK HOUR

P.M. PEAK HOUR

ERRATA SPAR M-215

PAGE (10) - ADT FOR 5th & 7th NORTH OF I-494 SHOULD BE 2000 V.P.D. INSTEAD OF 2400 V.P.D.

YEAR 2003 LINE DRAWING - ALSO SHOWS 2400 V.P.D. FOR 5th + 7th NORTH OF I-494. SHOULD BE 2000 V.P.D.

YEAR 1993 LINE DRAWING - SEGMENT ON I-494 BETWEEN JUNCTION OF TH 110 AND JUNCTION OF TH 3. ADT OF 2?,900 SHOULD BE 34,000 ADT.

Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

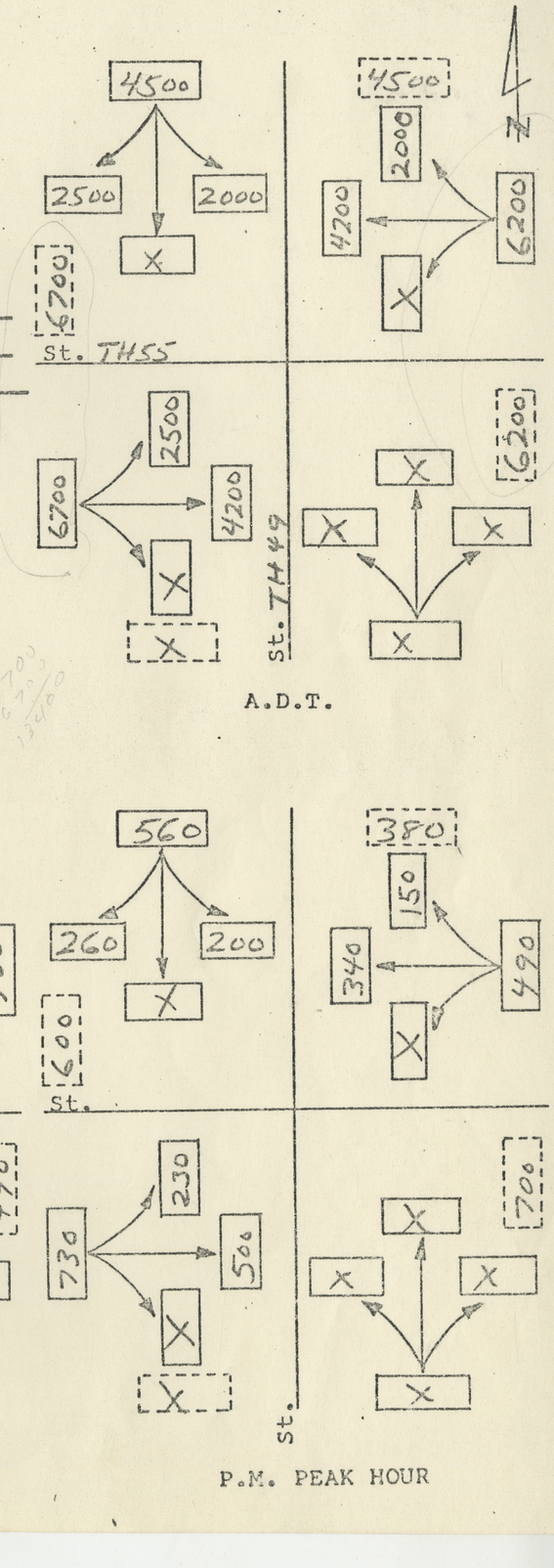
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

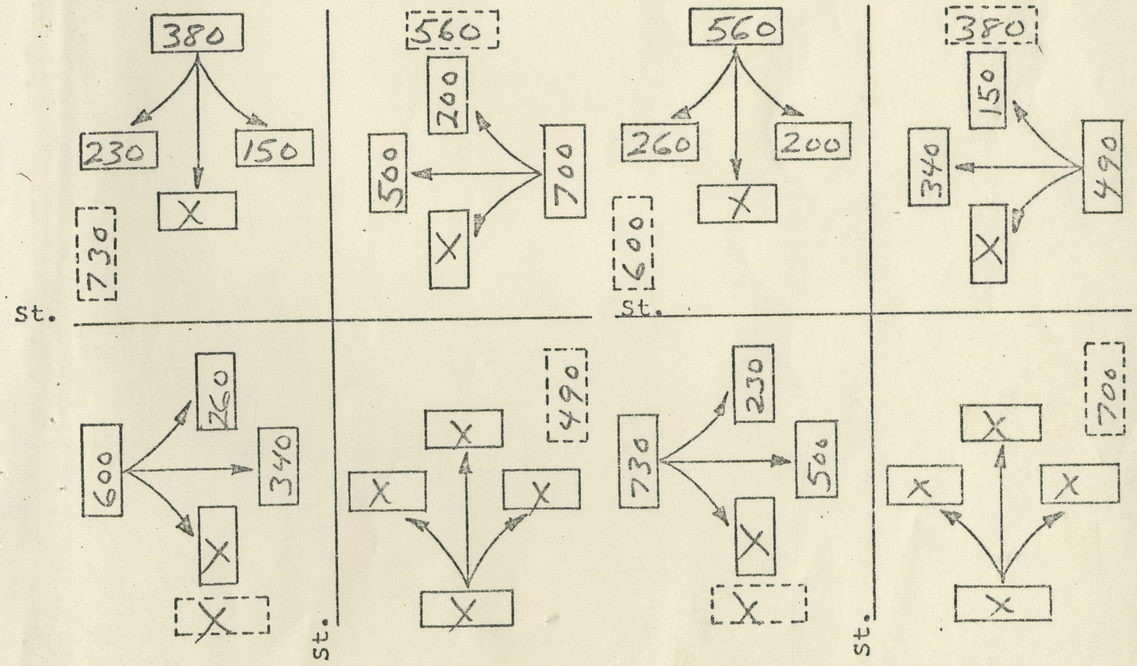
~~19~~ 2003 TRAFFIC ASSIGNMENT VOLUMES

Location TH55 and TH49
System No. I-C at Node
TAS No. DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output
Analysis
Traffic Count





Form 29131 (Rev. 12-68)

SCHEMATIC TURNING MOVEMENT

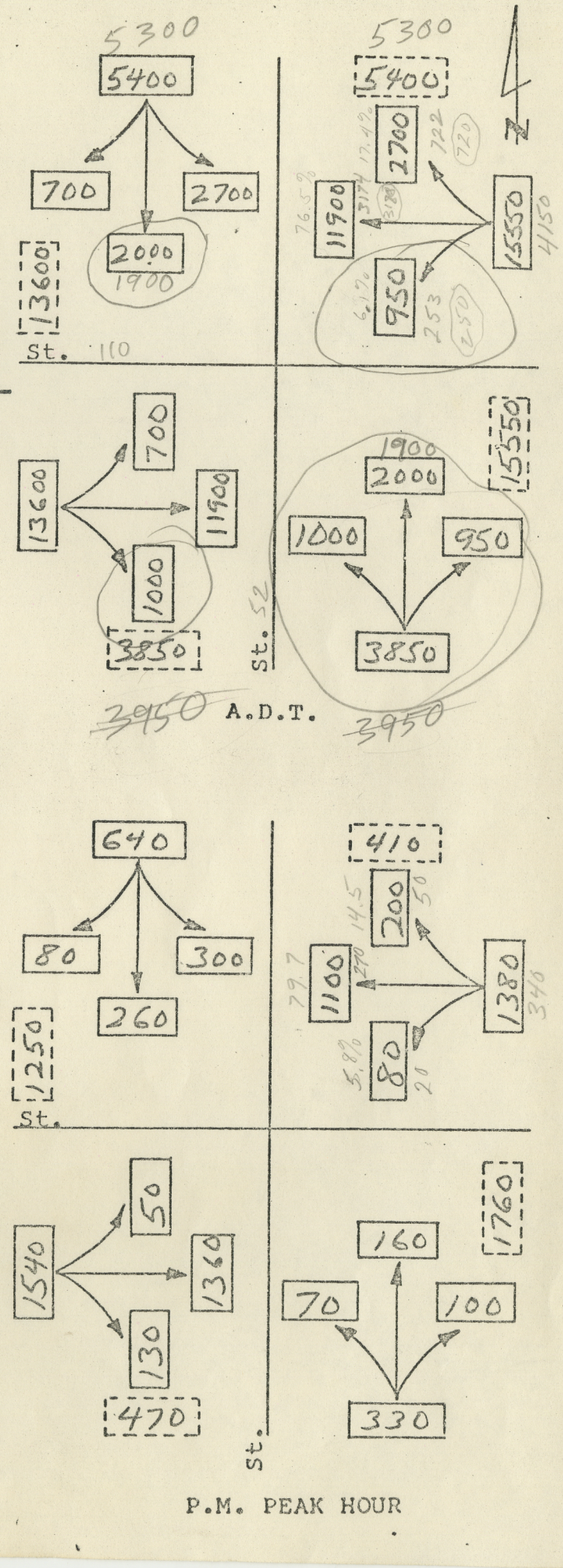
MINNESOTA HIGHWAY DEPARTMENT
Office of Transportation Planning
Traffic Analysis Section

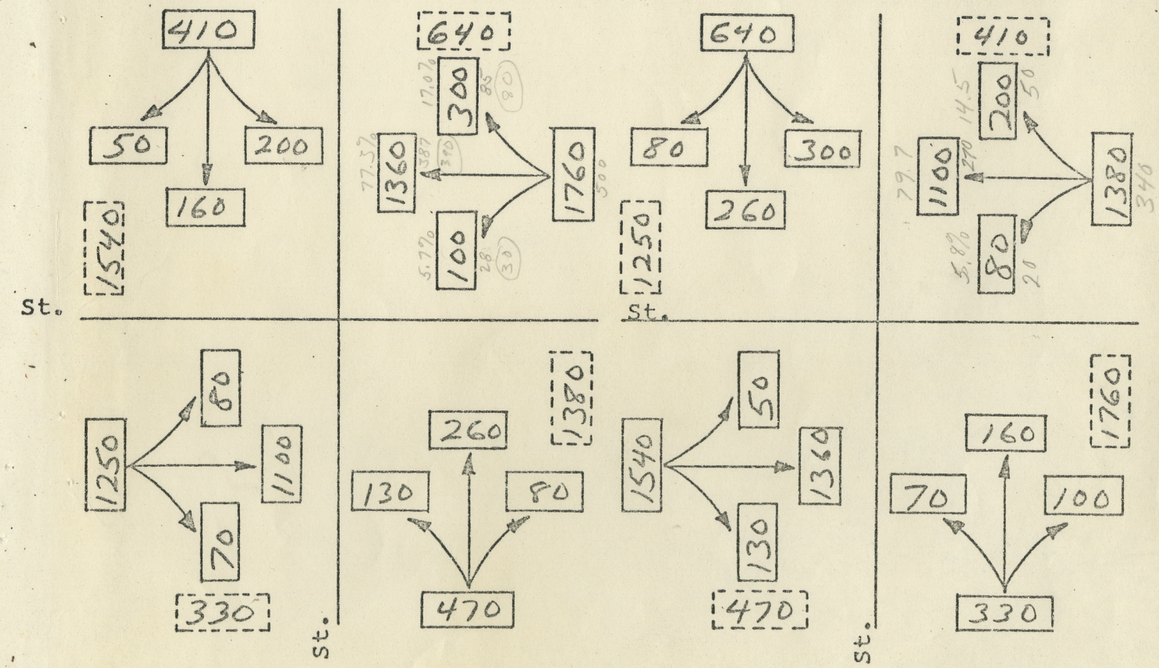
~~19~~ 2008 TRAFFIC ASSIGNMENT VOLUMES

Location TH 110 and TH52
System No. 1-C at Node
TAS No. DATE 4-78

DIRECTIONAL VOLUME IS SHOWN IN BOXES

DATA SOURCE:
Computer Output ___
Analysis ___
Traffic Count ___





A.M. PEAK HOUR

P.M. PEAK HOUR

MHD 29131 (Rev. 7-75)

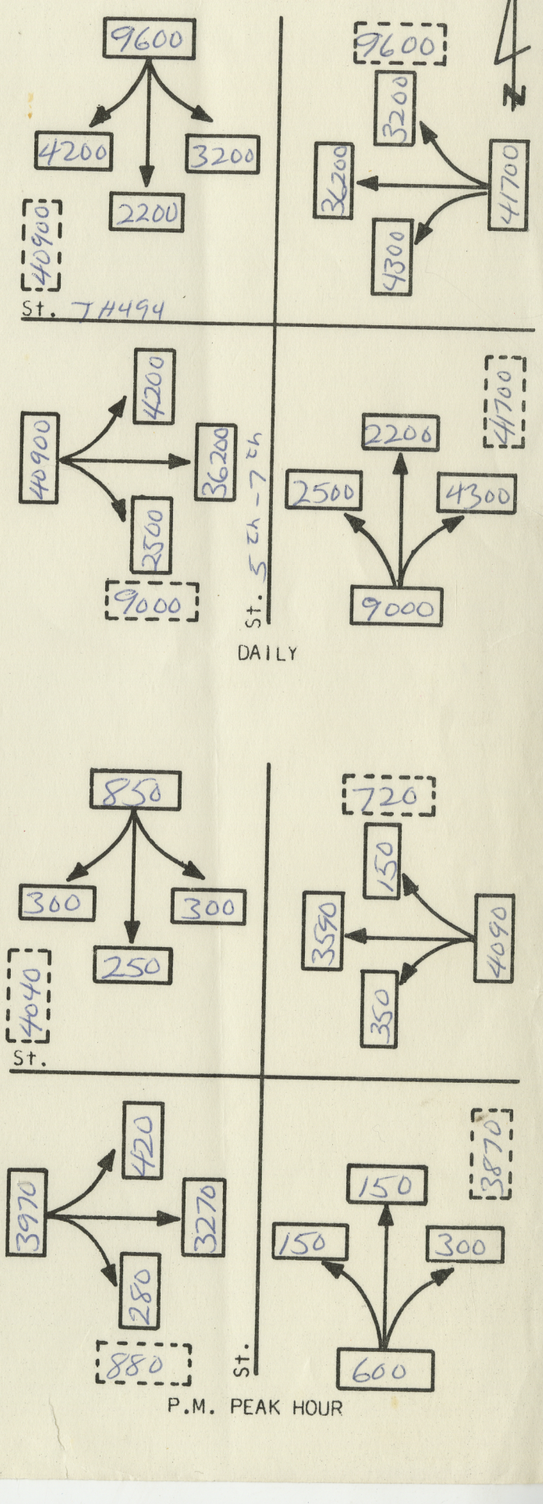
TRANSPORTATION PLANNING & PROGRAMMING DIVISION

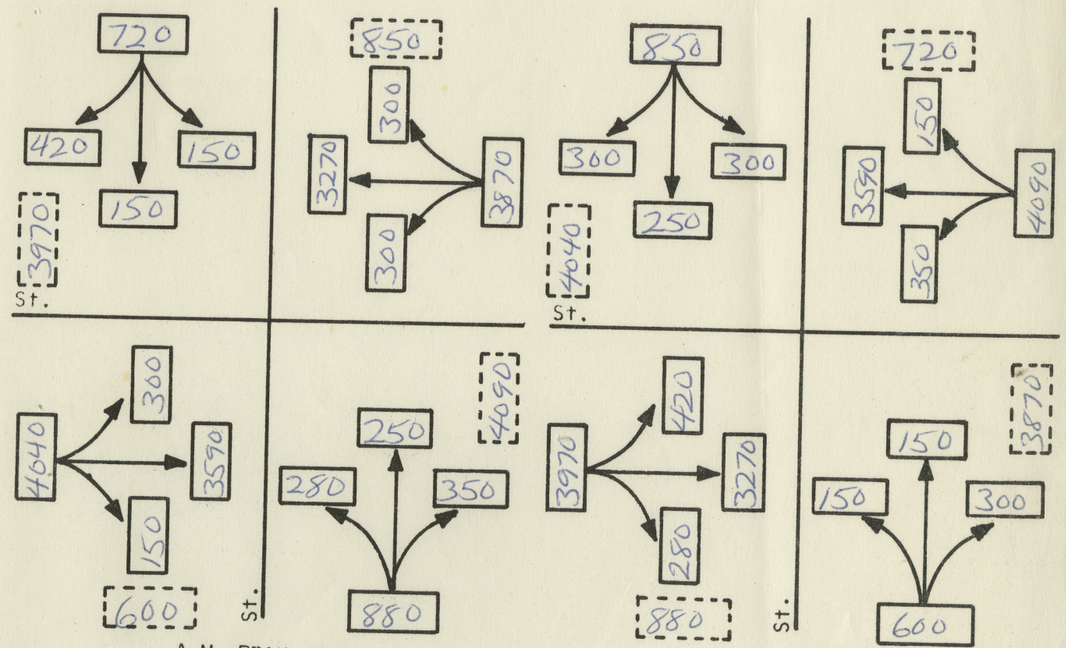
SCHEMATIC TURNING MOVEMENT

Year 2000 Traffic Volumes
City or County ___
Location TH494 and 5th-7th
System 16
SPAR ___ Date ___

DATA SOURCE:
Computer Output ___
Analysis ___
Traffic Count ___

COMMENTS: ___





A.M. PEAK HOUR

P.M. PEAK HOUR

MHD 29131 (Rev. 7-75)

TRANSPORTATION PLANNING & PROGRAMMING DIVISION

SCHEMATIC TURNING MOVEMENT

Year 2000 Traffic Volumes

City or County _____

Location TH494 and Stockyards

System 16

SPAR _____ Date _____

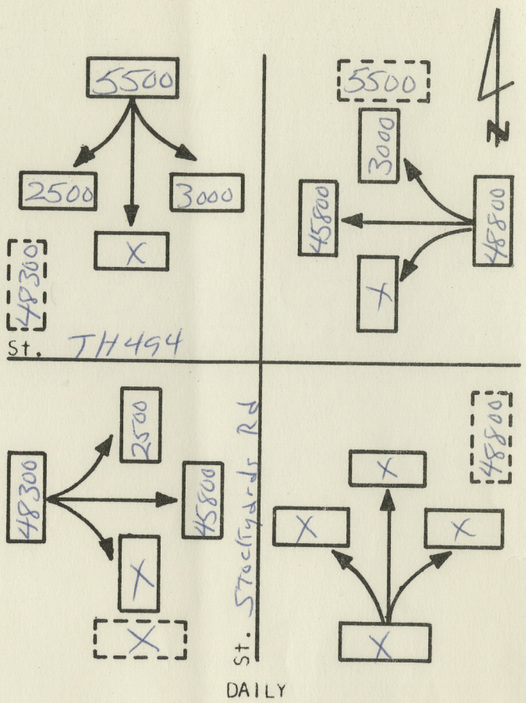
DATA SOURCE:

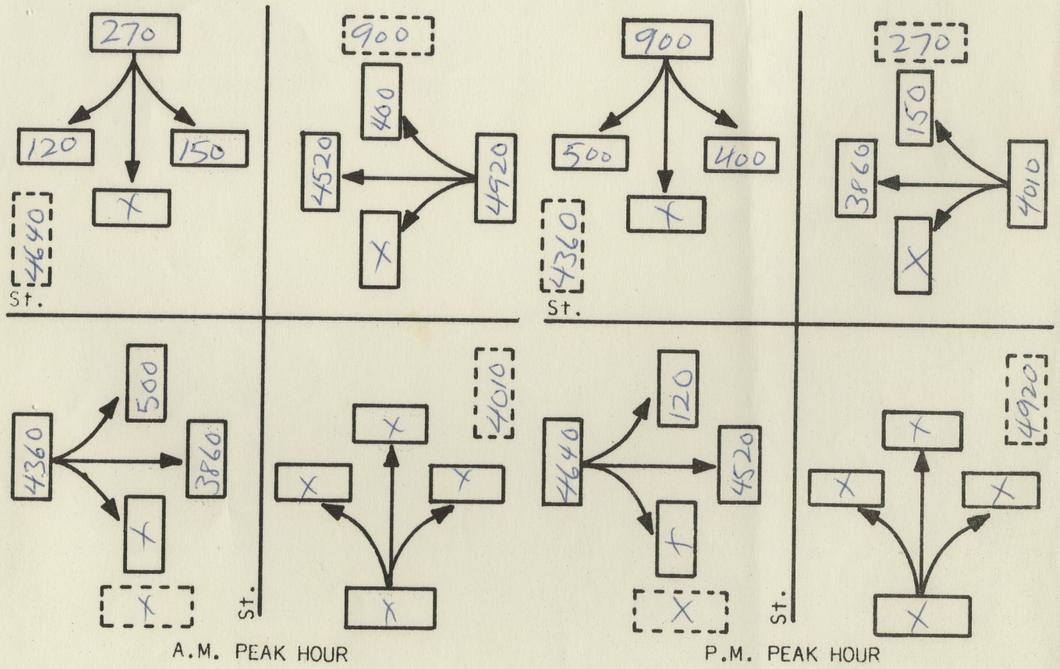
Computer Output ___

Analysis ___

Traffic Count ___

COMMENTS: _____





MHD 29131 (Rev. 7-75)

TRANSPORTATION PLANNING & PROGRAMMING DIVISION

SCHEMATIC TURNING MOVEMENT

Year 2000 Traffic Volumes

City or County _____

Location TH494 and Concord

System 16

SPAR _____ Date _____

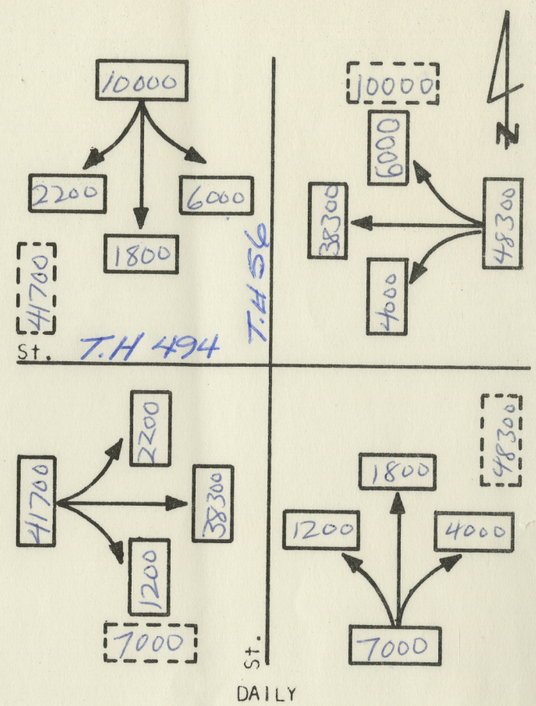
DATA SOURCE:

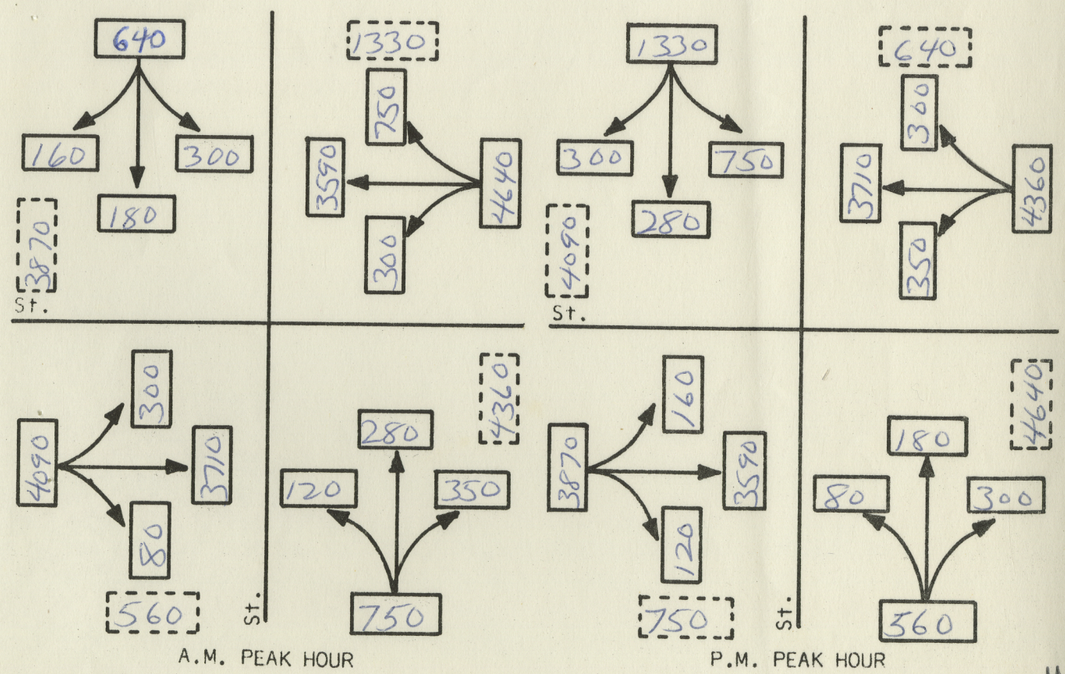
Computer Output ___

Analysis ___

Traffic Count ___

COMMENTS: _____



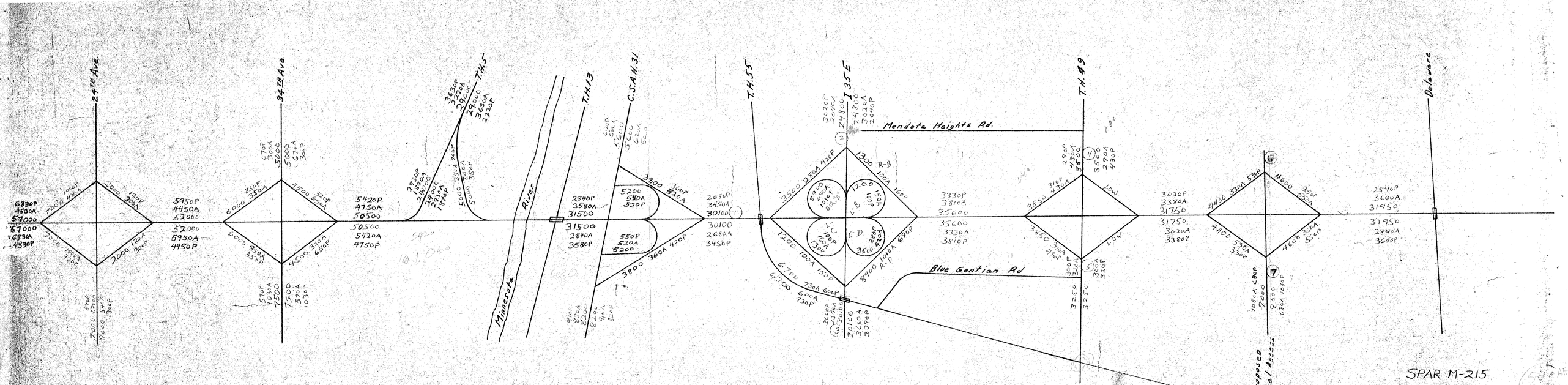


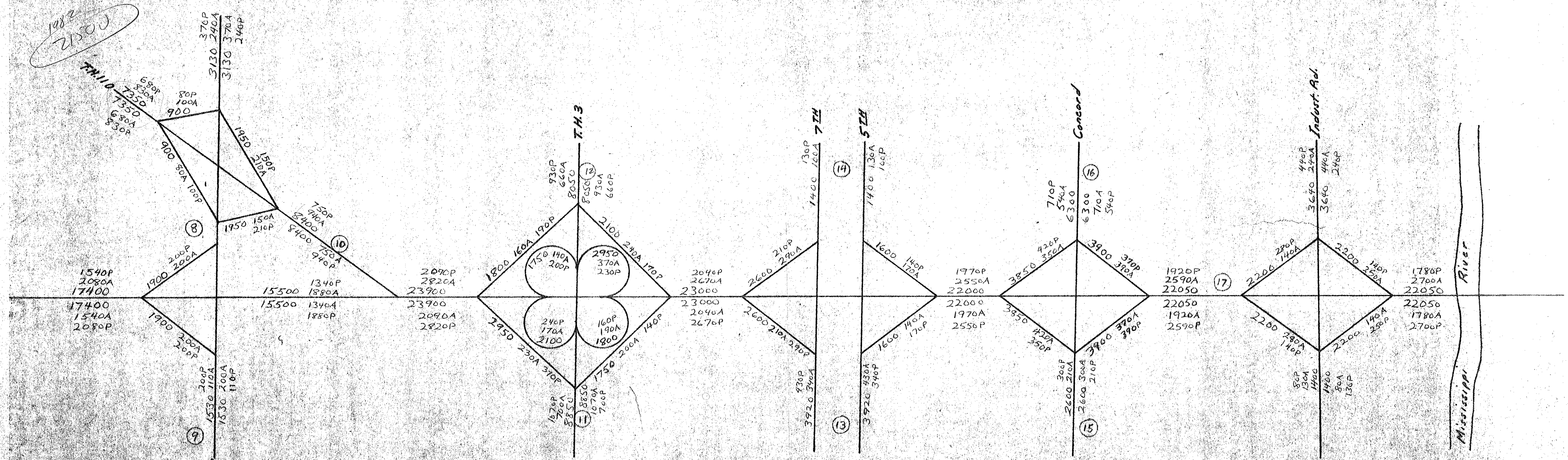
TH 494 POINT TO POINT - 2008 ADT

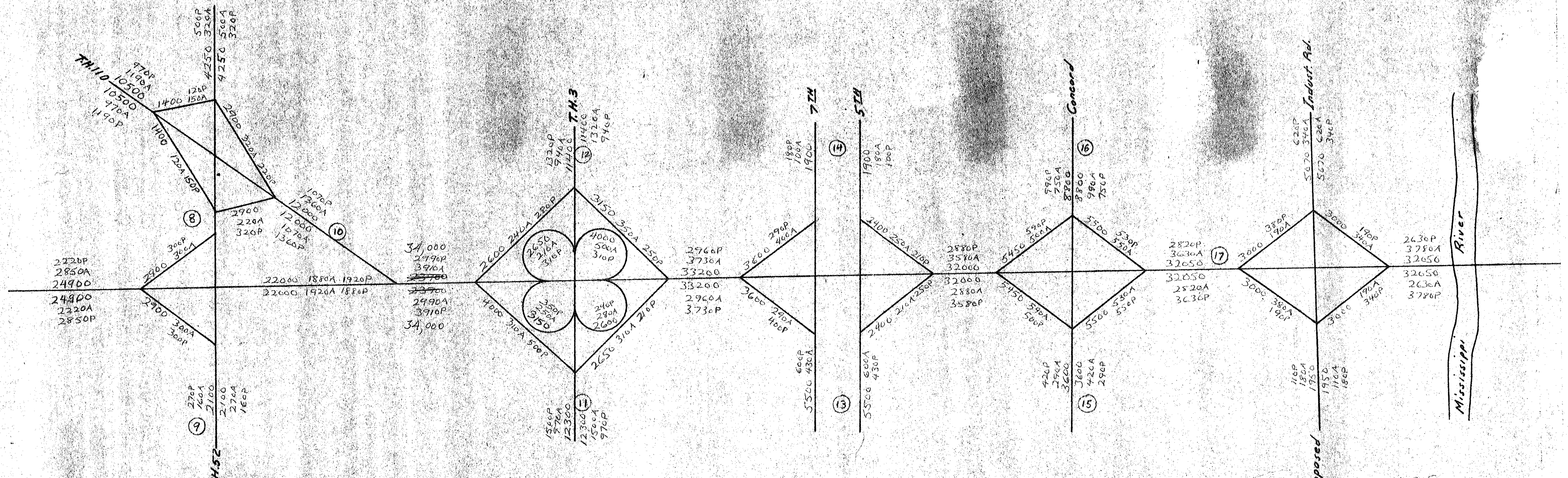
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOT
1	—	3500	1200	1400	1800	—	3100	1300	750	—	1400	1200	1300	150	—	1000	12000	30100
2	3500	—	20000	—	—	—	1300	—	—	—	—	—	—	—	—	—	—	24800
3	1200	20000	—	650	—	—	—	550	100	—	50	500	500	50	—	600	5900	30100
4	1400	—	650	—	1450	—	—	—	—	—	—	—	—	—	—	—	—	3500
5	1800	—	—	1450	—	—	—	—	—	—	—	—	—	—	—	—	—	3250
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	LOW
7	3100	1300	—	—	—	—	—	400	200	—	350	1000	400	50	—	300	1900	9000
8	1300	—	550	—	—	—	400	—	1600	—	—	—	—	—	—	—	—	3850
9	750	—	100	—	—	—	200	1600	—	—	—	—	—	—	—	—	—	2650
10	—	—	—	—	—	—	—	—	—	—	3550	600	2050	250	—	1600	7500	15550
11	1400	—	50	—	—	—	350	—	—	3550	—	7100	—	50	—	600	2700	15800
12	1200	—	500	—	—	—	1000	—	—	600	7100	—	—	[illegible]	1900	100	2000	14400
13	1300	—	500	—	—	—	400	—	—	2050	—	—	—	400	—	750	1600	7000
14	150	—	50	—	—	—	50	—	—	250	50	—	400	—	—	150	900	2000
15	—	—	—	—	—	—	—	—	—	—	—	1900	—	—	—	900	1800	4600
16	1000	—	600	—	—	—	300	—	—	1600	600	100	750	150	900	—	5300	11300
17	12000	—	5900	—	—	—	1900	—	—	7500	2700	2000	1600	900	1800	5300	—	41600
T	30100	24800	30100	3500	3250	LOW	9000	3850	2650	15550	15800	14400	7000	2000	4600	11300	41600	

TH 494 POINT TO POINT - 2008 PM PEAK

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOT
1	—	280	150	170	180	—	230	110	100	—	170	100	160	20	—	80	1700	3450
2	420	—	2500	—	—	—	100	—	—	—	—	—	—	—	—	—	—	3020
3	100	1600	—	80	—	—	—	50	10	—	—	40	60	—	—	50	400	2390
4	120	—	50	—	120	—	—	—	—	—	—	—	—	—	—	—	—	290
5	140	—	—	180	—	—	—	—	—	—	—	—	—	—	—	—	—	320
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	LOW
7	370	160	—	—	—	—	—	50	30	—	40	120	50	—	—	40	220	1080
8	160	—	80	—	—	—	30	—	200	—	—	—	—	—	—	—	—	470
9	50	—	10	—	—	—	20	120	—	—	—	—	—	—	—	—	—	200
10	—	—	—	—	—	—	—	—	—	—	460	40	230	20	—	140	870	1760
11	110	—	—	—	—	—	20	—	—	280	—	570	—	—	—	50	220	1250
12	150	—	60	—	—	—	80	—	—	60	850	—	—	—	200	10	240	1650
13	100	—	40	—	—	—	30	—	—	180	—	—	—	30	—	50	180	610
14	10	—	—	—	—	—	—	—	—	30	—	—	60	—	—	20	100	220
15	—	—	—	—	—	—	—	—	—			150				70	150	370
16	160	—	70	—	—	—	20	—	—	180	70	10	90	10	100	—	560	1270
17	790	—	700	—	—	—	150	—	—	650	320	160	120	80	230	450	—	3650
T	2680	2040	3660	430	300	LOW	680	330	340	1380	1910	1190	770	160	530	980	4640	


24TH Ave.
34TH Ave.
T.H.5
T.H.13
Minnesota River
C.S.A.H.31
T.H.55
I 35E
Mendota Heights Rd.
Blue Gentian Rd
T.H.49
Delaware
Proposed Local Access
31950 = 2003 ADT
2840A = 2003 AM PEAK
3600P = 2003 PM PEAK
SPAR M-215
ALT. A

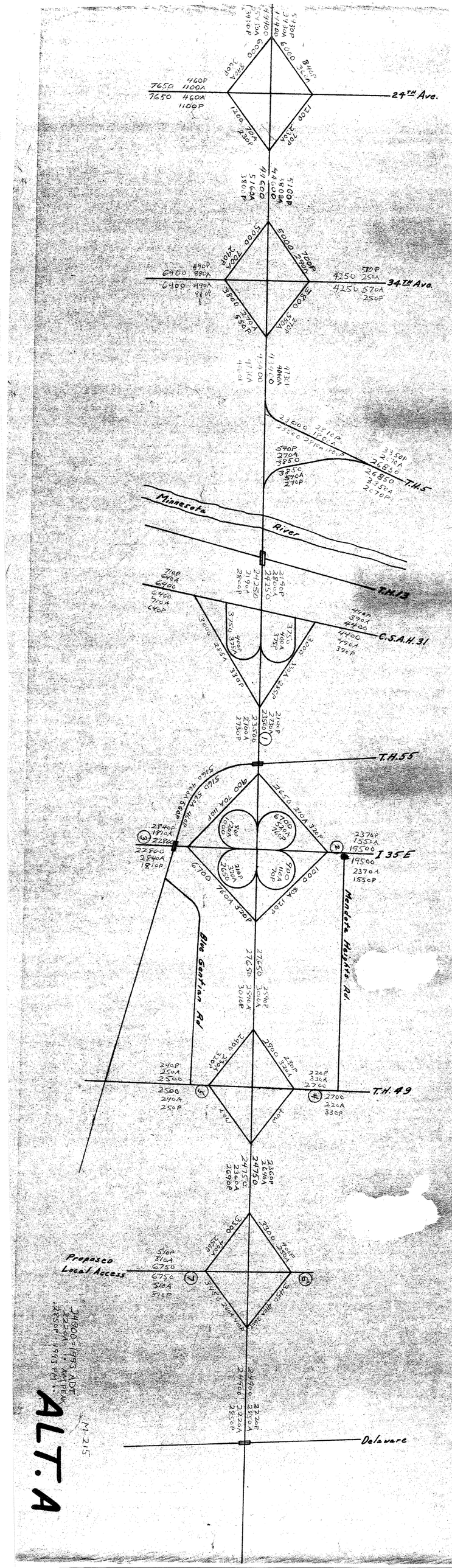

1982
21300
T.H.110
T.H.52
T.H.3
7TH
5TH
Concord
Industr. Rd.
Proposed
Mississippi River
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)
(16)
(17)
22050 = 1983 ADT
1780A = 1983 A.M. PEAK
2700P = 1983 P.M. PEAK
M 215
ALTA

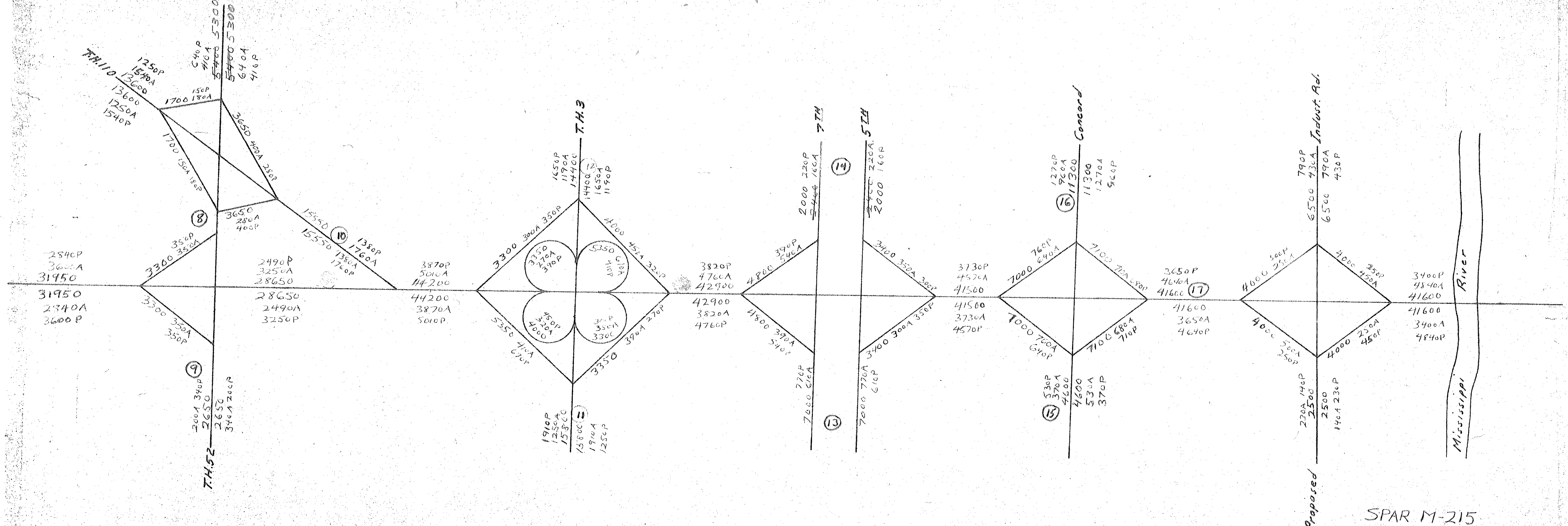


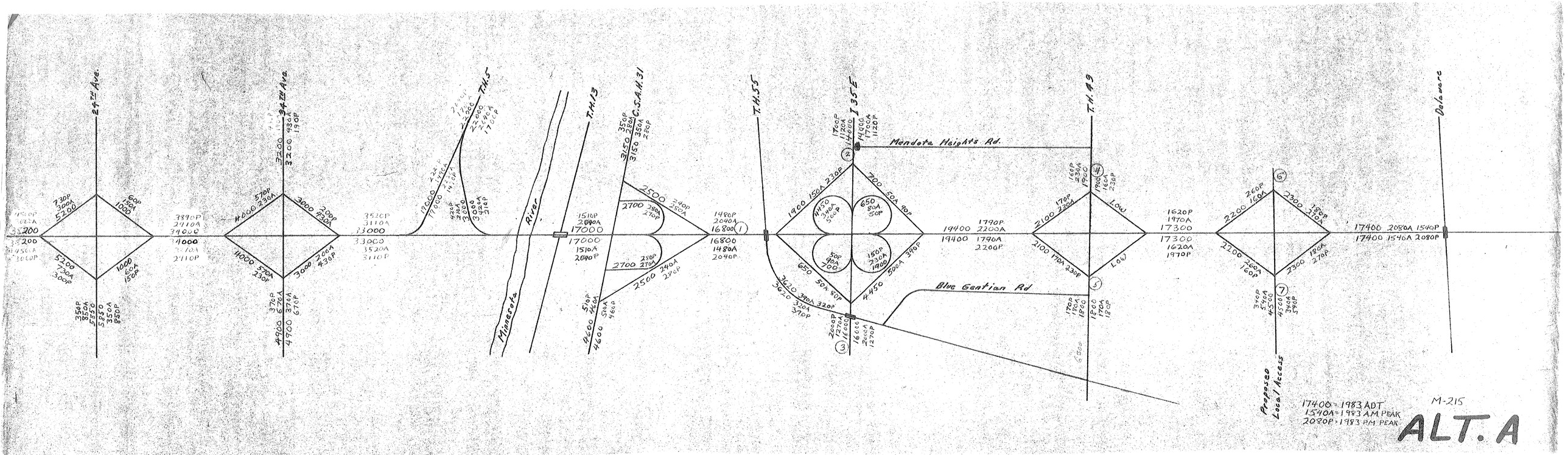
M-215

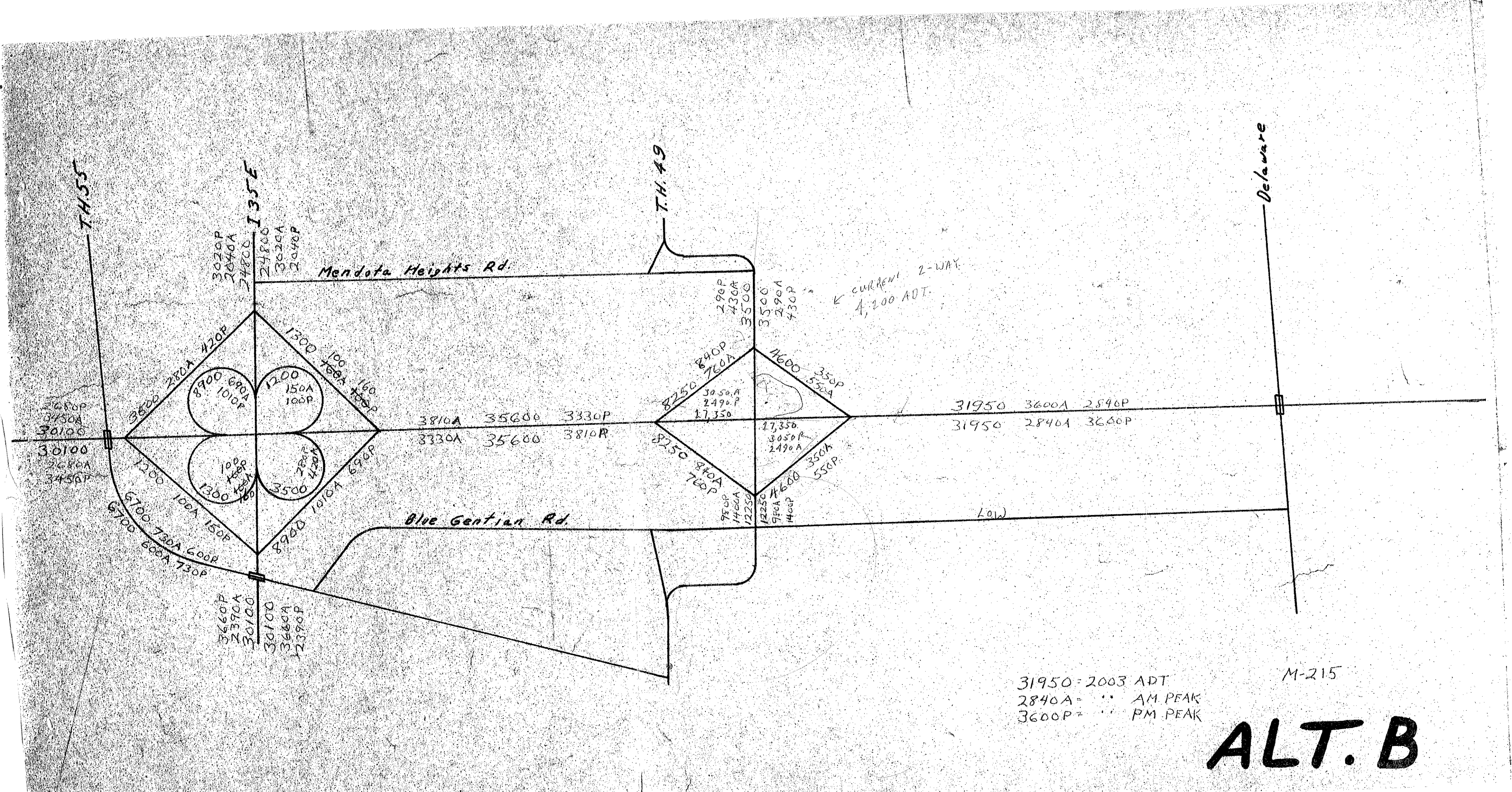
ALT. A

32050 = 1993 ADT
2630A = 1993 AM PEAK


24TH Ave.
34TH Ave.
T.H.5
Minnesota River
T.H.13
C.S.A.H. 31
T.H.55
I 35E
Mendota Heights Rd.
Blue Gentian Rd
T.H. 49
Proposed Local Access
Delaware
ALT. A
M-215
34900 = 1993 ADT
3220 AM PEAK
2850P PEAK HR


T.H.110
T.H.52
T.H.3
7 TH
5 TH
Concord
Industr. Rd.
Proposed
Mississippi River
SPAR M-215
11600 = 2003 ADT
3400A = " AM PEAK
4840P = " PM PEAK
ALT. A


24TH Ave.
34TH Ave.
T.H.5
T.H.13
Minnesota River
C.S.A.H.31
T.H.55
I 35E
Mendota Heights Rd.
T.H.49
Blue Gentian Rd
Delware
Proposed Local Access
17400 = 1983 ADT
1540A = 1983 A.M. PEAK
2080P = 1983 P.M. PEAK
M-215
ALT. A



31950 = 2003 ADT
2840A = " AM PEAK
3600P = " PM PEAK

M-215

ALT. B